UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,347	07/08/2003	Gregory A. Becker	PA3166US	7831

22830 7590 06/30/2006	EXAMINER	
CARR & FERRELL LLP	PHAM, KHANH B	
2200 GENG ROAD	ART UNIT	PAPER NUMBER
PALO ALTO, CA 94303	2166	

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

<table>
<tr><td rowspan="2">Office Action Summary</td><td>Application No.
10/614,347</td><td>Applicant(s)
BECKER ET AL.</td></tr>
<tr><td>Examiner
Khanh B. Pham</td><td>Art Unit
2166</td><td></td></tr>
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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>19 May 2006</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-12,14,15,20 and 26-32</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-12,14,15,20 and 26-32</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some *   c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   The amendment filed May 19, 2006 has been entered. Claims 4, 8, 14 have been

amended. Claims 13, 16-19 and 21-25 have been canceled. Claims 26-32 have been

added. Claims 1-12, 14-15, 20, 26-32 are pending in this Office Action.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

3.   **Claims 1-12, 14-15, 20, 26-32** are rejected under 35 U.S.C. 102(e) as being

anticipated by Goldstein et al. (US 6,665,815 B1), hereinafter "**Goldstein**".

As per claim 1, Goldstein teaches a method for maintaining a backup storage

system for a data storage system comprising:

- "receiving a plurality of data writes from an application program, the plurality of

    data writes occurring between a first time and a second time" at Col. 5 lines 44-

    48 and Fig. 3;

- "determining a backward increment between data on the data storage system at the second time and data on the data storage system at the first time based on the plurality of data writes from the application program to the data storage system" at Col. 6 lines 6-60 and Fig. 7;

- "storing the backward increment" at Col. 6 lines 6-31;

- "storing the plurality of data writes" at Col. 6 lines 6-31;

- "and updating the backup storage system so that the data on the data storage system at the second time is the same as the data on the backup storage system at the second time" at Col. 6 lines 6-31.

As per claim 2, Goldstein teaches the method of claim 1, further comprising: "determining a forward increment between the data on the data storage system at the first time and the data on the data storage system at the second time based on the plurality of data writes" at Col. 4 lines 1-50 and Figs. 4, 6.

As per claim 3, Goldstein teaches the method of claim 2, further comprising: "associating the backward increment with the forward increment" at Col. 8 lines 65-67.

As per claim 4, Goldstein teaches the method of claim 2, further comprising: "storing the forward increment; and storing the association of the backward increment and the forward increment" at Col. 9 lines 1-8.

As per claim 5, Goldstein teaches the method of claim 1, further comprising: "storing indicia of the plurality of data writes" at Col. 4 lines 11-40.

As per claim 6, Goldstein teaches the method of claim 1, wherein "said updating the backup storage system comprises: applying each of the plurality of data writes to an image of data on the backup storage system, thereby recreating the data on the data storage system at the second time" at Col. 6 lines 6-31 and Figs. 7-11.

As per claim 7, Goldstein teaches the method of claim 6, "said applying each of the plurality of data writes comprising: updating the image of the data stored on the backup storage system with the plurality of data writes" at Col. 6 lines 6-31 and Figs. 7-11.

As per claim 8, Goldstein teaches the method of claim 1, wherein "said updating the backup storage system comprises: optimally applying the plurality of data writes to the backup storage system, thereby recreating the data on the data storage system at the second time" Col. 6 lines 6-31 and Figs. 7-11.

As per claim 9, Goldstein teaches the method of claim 1, wherein "a difference between the first time and the second time is a predetermined time period" at Col. 3 lines 55-67.

As per claim 10, Goldstein teaches the method of claim 1, wherein "a difference between the first time and the second time is a variable time period" at Col. 3 lines 55-67.

As per claim 11, Goldstein teaches the method of claim 10, wherein "a difference between the first time and the second time is dependent on the rate of the plurality of data writes" at Col. 3 lines 55-67.

As per claim 12, Goldstein teaches the method of claim 7, wherein "a difference between the first time and the second time is dependent on a quantity of the plurality of data writes" at Col. 3 lines 55-67.

As per claim 14, Goldstein teaches the method of claim 1, wherein "said updating the backup storage system so that the data on the data storage system at the second time is the same as the data on the backup storage system at the second time includes applying the backward increment to an image of data on the backup storage system, thereby recreating the data on the data storage system at the second time" at Col. 6 lines 6-31.

As per claim 15, Goldstein teaches the method of claim 14, wherein "said updating the backup storage system so that the data on the data storage system at the second time is the same as the data on the backup storage system at the second time includes applying an individual data write to the image of data on the backup storage

system, thereby recreating the data on the data storage system at a point in time between the first time and the second time" Col. 6 lines 6-31 and Figs. 7-11.

As per claim 20, Goldstein teaches the method for using a backup storage system for a data storage system comprising:

- "receiving a plurality of data writes captured between an application and the data storage system, the plurality of data writes occurring between a first time and a second time" at Col. 5 lines 44-48 and Fig. 3;

- "identifying data blocks in the data storage system that were changed based on the plurality of data writes" at Col. 5 lines 23-48;

- "applying the plurality of data writes to an image on the backup storage system" at Col. 6 lines 6-31;

- "determining a forward increment between data on the data storage system at the first time and data on the data storage system at the second time based on the plurality of data writes" at Col. 3 line 55 to Col. 4 line 50 and Figs. 4, 6;

- "determining a backward increment between data on the data storage system at the second time and data on the data storage system at the first time based on a plurality of data writes" at Col. 6 lines 6-31 and Figs. 7-11;

- "storing the forward increment" at Col. 3 line 55 to Col. 4 line 50 ;

- "storing the backward increment" Col. 6 lines 6-31 and Figs. 7-11;

- "storing the plurality of data writes" Col. 6 lines 6-31 and Figs. 7-11;

- "and updating the backup storage system so that the data on the data storage
  system at the second time is the same as the data on the backup storage system
  at the second time" at Col. 6 lines 6-31 and Figs. 7-11.

Claims 26-32 recite a system for performing similar method as in claims 1-12,
14-15 and therefore rejected by the same reasons.

Response to Arguments

4.   Applicant's arguments filed May 19, 2006 have been fully considered but they are
not persuasive. The examiner respectfully traverses applicants' arguments.

Applicants argued that "Goldstein could only determine a "backward increment"
based on the difference between the two snapshots, not based on a plurality of data
writes from an application program to the data storage system". The examiner
respectfully submits that "the difference between the two snapshots" is same as
"plurality of data writes" applied to the first snapshot, because:

        First Snapshot + Data Writes = Second Snapshot

therefore:

        Second snapshot - First snapshot = Data Writes

or:

        The difference between two snapshot = Plurality of Data Writes

Goldstein therefore inherently anticipates the claimed limitation. The 102
rejection based upon Goldstein is hereby sustained.

Conclusion

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh B. Pham whose telephone number is (571) 272-4116. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571) 272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Khanh B. Pham
Examiner
Art Unit 2166

June 27, 2006